

What is claimed is:

1 1. A light directing apparatus comprising:
2 a light emitting layer including an array of light emitting elements; and
3 a light directing layer adjacent to the light emitting layer, said light directing layer
4 including an array of light directing elements in substantial registry with said array of light
5 emitting elements.

1 2. The apparatus of claim 1 wherein said array of light directing elements includes
2 a plurality of cylindrical lenses.

1 3. The apparatus of claim 2, wherein each of said cylindrical lenses is spaced from
2 a respective light emitting element from between about 1 to 3 times the distance between the
3 respective light emitting element and an adjacent light emitting element.

1 4. The apparatus of claim 1, further including means for indexing said light
2 emitting layer relative to said light directing layer.

1 5. The apparatus of claim 4, said means for indexing including complimentary
2 molded features on said light emitting layer and said light directing layer adapted to align said
3 light emitting layer with said light directing layer.

1 6. The apparatus of claim 5, wherein said light emitting elements are arranged
2 along a substrate to form a plurality of parallel stripes and said light directing elements are
3 cylindrical lenses each of the lenses having a long axis parallel to a respective stripe.

1 7. The apparatus of claim 1, further including a contrast-enhancing coating
2 formed within inactive regions of the light directing apparatus.

1 8. The apparatus of claim 1, further including an optical integration plate adjacent
2 the light directing layer.

1 9. The apparatus of claim 8, further including an optical adhesive between the light
2 directing layer and the optical integration plate.

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1 10. The apparatus of claim 9 wherein said optical adhesive has an index of refraction
2 that falls between an index of refraction of the light directing layer and an index of refraction of
3 the optical integration plate.

1 11. The apparatus of claim 1, wherein centers of the light directing elements are
2 offset from centers of the light emitting elements.

1 12. The apparatus of claim 1, wherein a distance between centers of adjacent light
2 directing elements are different from a distance between centers of adjacent light emitting
3 elements.

1 13. The apparatus of claim 12, wherein the distance between centers of adjacent light
2 directing elements is less than the distance between centers of adjacent light emitting elements.

1 14. A light directing apparatus comprising:
2 an LED array having RGB light emitting diode structures arrayed longitudinally along a
3 substrate to form a plurality of RGB triplet groups; and
4 a lenslet array having a plurality of lenslet structures, each one of the lenslet structures
5 positioned adjacent a respective one of the RGB triplet groups, said lenslet structures including
6 for each respective RGB triplet group a plurality of cylindrical lenses indexed to said respective
7 RGB triplet group, said cylindrical lenses being longitudinally arrayed in parallel to said RGB
8 light emitting diode structures.

1 15. The apparatus of claim 14, wherein each of said lenslet structures is offset from
2 each of said respective RGB triplet groups by an identical amount.

1 16. The apparatus of claim 14, wherein a first of said lenslet structures is offset from
2 a first respective one of said RGB triplet groups by an amount that is different than an offset
3 between a second of said lenslet structures and said second respective one of said RGB triplet
4 groups.

1 17. The apparatus of claim 14, further including a contrast-enhancing coating
2 formed within inactive regions of the light directing apparatus.

1 18. A method for directing light from a display incorporating a plurality of light
2 emitting pixel elements comprising:
3 directing light from a first of the plurality of light emitting pixel elements through a first
4 light directing element; and
5 directing light from a second of the plurality of light emitting pixel elements through a
6 second light directing element.

1 19. The method of claim 18, further including:
2 directing the light from the first light directing element in a first preferential direction;
3 and
4 directing the light from the second light directing element in a second preferential
5 direction different from the first preferential direction.

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